ABSTRACT

Opposite sides of an article are irradiated to sterilize the article. The cumulative irradiation should be above a first value, and below a second value greater than the first value, at all of the positions in the article to provide the article with desired radiation benefits. Any amount of cumulative radiation between the first and second values is considered as optimal values. For a first range of article thicknesses, the cumulative radiation in the article is at the optimal values. For article thicknesses in a second range greater than in the first range, the cumulative radiation at positions in the article is greater than the optimal values. For article thicknesses in a third range greater than the second range, the cumulative radiation at the different positions in the article is at the optimal values. For the thicknesses in the second range, a member disposed in the radiation path weakens the radiation passing to the article, thereby reducing the cumulative radiation to an optimal value. For each thickness in the second range, a different amount of cumulative radiation above the optimal value may occur when the member is not disposed in the radiation path. The member may accordingly be provided with different thicknesses, dependent upon the amount of the cumulative radiation in the article for the different positions in the second thickness range, to reduce the cumulative radiation in the article to an optimal value. A system may automatically position the member properly for article thicknesses in the second range.

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